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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,449	10/29/2003	Daniele C. Brotto	0275Y-702CPA	5973

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EXAMINER	
CAVALLARI, DANIEL J	
ART UNIT	**PAPER NUMBER**
2836	

DATE MAILED: 11/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H·A

Office Action Summary	Application No.	Applicant(s)	
	10/696,449	BROTTO, DANIELE C.	
	Examiner	Art Unit	
	Daniel J. Cavallari	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-69* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,10-14,16-18,21-26,28,30-44,48-51,54-58 and 61-69* is/are rejected.

7)☒ Claim(s) *7-9,15,19,20,27,29,45-47,52,53,59 and 60* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 September 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11/21/03 & 4/28/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The examiner acknowledges a submission of the preliminary amendment filed on 10/29/2003. The changes to the claims are accepted.

Information Disclosure Statement

The information disclosure statements (IDS) submitted on 11/21/2003 and 4/28/2004 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements are being considered by the examiner.

Claim Objections

Claims 2, 12, 25, 32, and 34 are objected to because of the following informalities:

Claims 2 and 12 recite the limitation "the on/off switch". There is insufficient antecedent basis for this limitation in the claim. An “on/off switch” is not previously disclosed. However, Claim 1 recites the limitation of two different switches, “a motor control switch” and “an electronic switch”. “An on/off switch” would therefore be a third switch of the invention which is not taught or shown in the figures. The “on/off switch” will be examined as best understood in which it is meant to refer to the “motor control switch”.

Claims 25, 32, and 34 recite the limitation "the motor control switch". There is insufficient antecedent basis for this limitation in the claim. A "motor control switch" is not previously disclosed. However, Claim 25 recites the limitation of two different switches, "an On/Off Switch" and "an electronic switch". "A motor control switch" would therefore be a third switch of the invention which is not taught or shown in the figures. The "motor control switch" will be examined as best understood in which it is meant to refer to the "On/Off switch".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6, 11, 18, 23, 28, 29, 31, and 38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "hum" in claim 6 is a relative term which renders the claim indefinite. The term "hum" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The claims will be examined as best understood in which "power supplied is greater than zero, but insufficient for the motor to rotate".

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 64-66 and 69 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 42-48 and 51 of copending Application No. 10/360957. Although the conflicting claims are not identical, they are not patentably distinct from each other because:

Claim 64 recites the limitation of "a system for preventing inadvertent operation of a motor..." while Claim 42 of application 10/360957 recites the limitation of "preventing inadvertent start-up of a motor..". Although the two claims differ, "start-up of a motor" is considered to be part of "operation of a motor".

"An electric valve configured to control power supplied to the motor" is read on by Claim 42 of the co-pending application which recites "providing insufficient power to the motor to function when the motor is initially electrically connected to the power source by controlling of an electronic valve."

Claim 64 further states the limitation of "a controller configured to sense whether voltage is present across the motor when the motor is initially connected to the power source, and disable normal operation of the motor if voltage is present across the motor when the motor is initially connected to the power source." This is read on by Claim 43 of the co-pending application which states "a control circuit to sense whether voltage is present across the motor, and to provide insufficient power (disable normal operation) of the motor to function when the motor is initially electrically connected to the power source.

Although the preamble of Claim 42 in the co-pending application recites the limitation of an "On/Off switch" for controlling the motor, a "on/off" switch used to control the power to a device is well known if the art and used in a variety of electronic devices in which control the flow of power.

Claim 65 recites the limitation of electrically connecting a motor to an AC power source, read on by Claim 44 of the co-pending application. The claim further recites the limitation of firing an electronic valve at a low conduction angle, which is recited in Claim 45 of the co-pending application "...utilizing the control circuit to fire a triac at a low conduction angle".

Claim 66 recites the limitation "wherein the electronic valve is a triac" as previously provided by Claim 45 of the co-pending application.

Claim 69 recites the same limitations as Claim 51 of the co-pending application with the exception of sensing a voltage as opposed to sensing a current, as claimed in the co-pending application. It is well known in the art, by using ohms law, the relationship between voltage and current, V=I*R. Therefore, it is obvious to one of ordinary skill in the art to sense either voltage or current using a processor.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 5, 13, 14, 16, 17, 50, 57, and 64 is rejected under 35 U.S.C. 102(b) as being anticipated by Barthel et al. (US 4,466,040).

Barthel et al. teaches:

In regard to Claims 1, 13, 50, 57, & 64

A motor control system for an electrically powered motor comprising:

- A motor switch (12) coupled between a motor (14) and a first side of an electrical power source (36) (See Figure 3)

- An electronic switch/valve (66) coupled between the motor (14) and a second side of the electrical power source (34) (See Figure 3)
- Determining with a controller, read on by the load sensor (20, See Figure 1), whether a motor control switch (12) is in the "on" position when the motor (14) is initially electrically connected to the power source (See Figure 3 & Column 3, Lines 15-30).
- Utilizing the controller (20) to disable normal operation of the motor when the controller determines that the motor control switch is in the "on" position when the motor is initially electrically connected to the power supply (See Figure 3 & Column 3, Lines 15-30).

In regard to Claims 3 &16

- Determining the position of an on/off switch (12) when a motor is electrically connected to a power source by using a control circuit (20), to sense the current flowing through the motor, thereby determining whether voltage is applied to the motor (See Abstract and Figures 1 & 3)

In regard to Claims 5 & 17

- Connecting the motor to an AC power source (See Column 3, Lines 15-19 and Figure 3)

In regard to Claims 14 & 50

- A shunt resistor (60) with relay contact (58) and in series with the motor (14) (when contacts 58 are open) and second side (34) of the power source wherein to determine the position of the motor control switch (12) the controller (20) is configured to monitor voltage across the resistor, read on by the capacitor (62) (See Figure 3 & Column 4, Lines 60-68).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2, 21, 25, 40, 42, 43, 54, 61, 68, and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barthel et al. and Shibuya et al. (JP 60174079 A)

Incorporating all arguments above of the motor control system and controller (20) taught by Barthel et al., Barthel et al. fails to teach the use of the controller to enable the motor once the controller determines the switch has been placed in the "off" position.

Shibuya et al. teaches the use of a controller, read on by a microprocessor (9), to determine the position of an on/off switch (SW1) when a motor is electrically connected

to a power source (See Abstract & Figure 4) and control the amount of power provided to the motor based on the position of the on/off switch when the motor is initially connected to the power source by use of a control circuit read on by an electronic valve read on by the thyristor (BCR) which is turned off if the switch is initially closed when the device is plugged into the electrical source thus preventing the motor from starting and turned on when the switch is placed in the off position and then back to the on position (See Abstract & Figure 4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings Barthel et al. incorporating the microprocessor taught by Shibuya et al. The motivation would have been to simplify the analog circuitry taught by Barthel et al. by using a microcontroller as taught by Shibuya et al.

Barthel et al. further teaches:

In regard to Claim 26

- A shunt resistor (60) with relay contact (58) and in series with the motor (14) (when contacts 58 are open) and second side (34) of the power source wherein to determine the position of the motor control switch (12) the controller (20) is configured to monitor voltage across the resistor, read on by the capacitor (62) (See Figure 3 & Column 4, Lines 60-68).

In regard to Claims 34, 36, & 37

- A motor switch (12) coupled between a motor (14) and a first side of an electrical power source (36) (See Figure 3)
- An electronic switch (66) coupled between the motor (14) and a second side of the electrical power source (34) (See Figure 3)
- A shunt resistor (60) with relay contact (58) and in series with the motor (14) (when contacts 58 are open) and second side (34) of the power source wherein to determine the position of the motor control switch (12) the controller (20) is configured to monitor voltage across the resistor, read on by the capacitor (62) (See Figure 3 & Column 4, Lines 60-68).

In regard to Claim 41

- Determining the position of an on/off switch (12) when a motor is electrically connected to a power source by using a control circuit (20), to sense the current flowing through the motor, thereby determining whether voltage is applied to the motor (See Abstract and Figures 1 & 3)

In regard to Claim 69

- An on/off switch (12) for controlling the application of power (See Figure 3 and Abstract)
- A motor control circuit, read on by components 64 and 66, to sense the current flowing through the motor (See Abstract), thereby sensing whether

a voltage is present across the motor when a power cord of a tool is coupled to a power source (See Column 4, Line 60 to Column 5, Line 6)

- Providing insufficient power to the motor source by controlling the operation of an electronic switch (66) (See Abstract and Column 4, Line 60 to Column 5, Line 14)

Barthel et al. fails to teach the use of a processor for sensing current. Shibuya et al. teaches the use of a processor (9) to sense current from the resistor (R) (See Figure 4 and Abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Barthel et al. incorporating the processor taught by Shibuya. et al. The motivation would have been to provide a simple and more reliable detection means than the analog controls used by Barthel et al.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Barthel et al. and Nakayama et al. (DE 1961851 A1).

Incorporating all arguments above of the motor control system taught by Barthel et al. which included a controller (20) used to sense current, however Barthel et al. fails to teach the use of the controller to sense voltage.

However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to sense voltage as opposed to current as the relationship

between current and voltage is well known in the art as expressed in ohms law, V=I*R. Nakayama et al. teaches a motor control device to prevent inadvertent power supply to an electrical motor in which voltage is used to produce a signal to a comparator (6) connected to a control circuit to control power to a motor (See Abstract & Figure 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the motor controller taught by Barthel et al. incorporating the voltage control and sensing taught by Nakayama et al. The motivation would have been to simplify the analog current sensing circuitry with a less complex voltage sensor.

Claims 6, 18, 51, 58, 65, & 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barthel et al. and Bradus (US 4,628,233)

Incorporating all arguments above, Barthel et al. further teaches providing a motor with insufficient power for the motor to function (See Abstract) when the motor control switch is on and the device is initially plugged in and further teaches an electronic valve read on by a triac (66), but fails to teach utilizing a controller to provide low conduction angles to an electronic switch to control the motor.

Bradus teaches using a microcontroller to control a motor and providing speed control at low conduction angles to a triac to control the motor (See Abstract and Column 5, Lines 54-66).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the control circuitry taught by Barthel et al. and Shibuya

et al. incorporating the control techniques taught by Bradus. The motivation would have been to provide a reliable and affective control means to an electronic switch.

Claims 10, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barthel et al. and Carrier (2002/0189831 A1)

Incorporating all arguments above, Barthel et al. teaches connecting a motor to an AC power supply but fails to teach connecting to a DC power supply.

Carrier et al. teaches connecting a motor to either an AC or DC power source (See Abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the safety switch of Barthel et al. incorporating the DC power supply taught by Carrier et al. The motivation would have been to provide a switch capable of supplying power to DC loads.

Claims 11, 23, 55, 56, 62, 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barthel et al., Carrier, and Hopkins (US 5,254,916)

Incorporating all arguments above of the microcontroller used to control the amount of power provided to a DC motor taught by Barthel et al., Shibuya et al., and Carrier and noting they teach an electronic valve read on by the triac, they fail to teach utilizing the microcontroller to produce a low duty cycle producing low motor speeds.

Hopkins teaches varying the speed of a DC motor by controlling the duty cycle and further teaches using a low duty cycle to drive the motor at a slow speed through a power transistor (34) (See Column 4, Lines 18-28).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the DC motor control system taught by Barthel et al., Shibuya et al., and Carrier incorporating the power transistor and duty cycle control of Hopkins. The motivation would have been to provide a reliable and affective control means for a DC motor.

Claims 12 & 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Barthel et al., Carrier, and Shibuya et al.

Incorporating all arguments above of the motor control system and controller (20) taught by Barthel et al., Barthel et al. fails to teach the use of the controller to enable the motor once the controller determines the switch has been placed in the "off" position.

Shibuya et al. teaches the use of a controller, read on by a microprocessor (9), to determine the position of an on/off switch (SW1) when a motor is electrically connected to a power source (See Abstract & Figure 4) and control the amount of power provided to the motor based on the position of the on/off switch when the motor is initially connected to the power source by use of a control circuit read on by an electronic valve read on by the thyristor (BCR) which is turned off if the switch is initially closed when the device is plugged into the electrical source thus preventing the motor from starting and

turned on when the switch is placed in the off position and then back to the on position (See Abstract & Figure 4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings Barthel et al. incorporating the microprocessor taught by Shibuya et al. The motivation would have been to simplify the analog circuitry taught by Barthel et al. by using a microcontroller as taught by Shibuya et al.

Claims 10 & 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barthel et al. and Carrier

Incorporating all arguments above, Barthel et al. teaches connecting a motor to an AC power supply but fails to teach connecting to a DC power supply.

Carrier et al. teaches connecting a motor to either an AC or DC power source (See Abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the safety switch of Barthel et al. incorporating the DC power supply taught by Carrier et al. The motivation would have been to provide a switch capable of supplying power to DC loads.

Claims 30-32, 39, 44, 48, 49, & 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barthel et al., Shibuya et al., Carrier, and Hopkins.

In regard to Claims 30, 31, & 39

Incorporating all arguments above, Barthel et al. teaches connecting a motor to an AC power supply but fails to teach connecting to a DC power supply.

Carrier et al. teaches connecting a motor to either an AC or DC power source (See Abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the safety switch of Barthel et al. incorporating the DC power supply taught by Carrier et al. The motivation would have been to provide a switch capable of supplying power to DC loads.

Incorporating all arguments above of the controller used to control the amount of power provided to a DC motor taught by Barthel et al., Shibuya et al., and Carrier and noting they teach an electronic valve read on by the triac, they fail to teach utilizing the controller to produce a low duty cycle producing low motor speeds.

Hopkins teaches varying the speed of a DC motor by controlling the duty cycle and further teaches using a low duty cycle to drive the motor at a slow speed through a power transistor (34) (See Column 4, Lines 18-28).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the DC motor control system taught by Barthel et al.,

Shibuya et al., and Carrier incorporating the power transistor and duty cycle control of Hopkins. The motivation would have been to provide a reliable and affective control means for a DC motor.

In regard to Claim 32

Barthel et al. further teaches:

- A motor switch (12) coupled between a motor (14) and a first side of an electrical power source (36) (See Figure 3)
- An electronic switch (66) coupled between the motor (14) and a second side of the electrical power source (34) (See Figure 3)
- A shunt resistor (60) with relay contact (58) and in series with the motor (14) (when contacts 58 are open) and second side (34) of the power source wherein to determine the position of the motor control switch (12) the controller (20) is configured to monitor voltage across the resistor, read on by the capacitor (62) (See Figure 3 & Column 4, Lines 60-68).

Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Barthel et al. and Shibuya et al. and Nakayama et al.

Incorporating all arguments above of the motor control system taught by Barthel et al. which included a controller (20) used to sense current, however Barthel et al. fails to teach the use of the controller to sense voltage.

However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to sense voltage as opposed to current as the relationship between current and voltage is well known in the art as expressed in ohms law, V=I*R. Nakayama et al. teaches a motor control device to prevent inadvertent power supply to an electrical motor in which voltage is used to produce a signal to a comparator (6) connected to a control circuit to control power to a motor (See Abstract & Figure 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the motor controller taught by Barthel et al. incorporating the voltage control and sensing taught by Nakayama et al. The motivation would have been to simplify the analog current sensing circuitry with a less complex voltage sensor.

Claims 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Barthel et al., Shibuya et al., Carrier, Hopkins, Nakayama et al. and Boisvert et al. (US 2002/0101210 A1)

Incorporating all arguments above of the motor control system taught by Barthel et al. which included a controller (20) used to sense current, however Barthel et al. fails to teach the use of an amplifier coupled to the controller.

Boisvert et al. teaches an amplifier that produces an output that is inputted by a controller (2) (See Paragraph 52).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the motor control system of Barthel et al. incorporating an amplifier couple to the controller as taught by Boisvert et al. The motivation would have been to run the circuitry at a lower power while providing an amplifier to amplify the necessary control signals.

Claims 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barthel et al., Shibuya et al. and Bradus

Incorporating all arguments above, Barthel et al. further teaches providing a motor with insufficient power for the motor to function (See Abstract) when the motor control switch is on and the device is initially plugged in and further teaches an electronic valve read on by a triac (66), but fails to teach utilizing a controller to provide low conduction angles to an electronic valve to control the motor.

Bradus teaches using a microcontroller to control a motor and providing speed control at low conduction angles to a triac to control the motor (See Abstract and Column 5, Lines 54-66).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the control circuitry taught by Barthel et al. and Shibuya et al. incorporating the control techniques taught by Bradus. The motivation would have been to provide a reliable and affective control means to an electronic switch.

Allowable Subject Matter

Claims 7, 8, 9, 15, 19, 20, 27, 28, 29, 45, 46, 47, 52, 53, 59, and 60 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In regard to Claims 7, 8, 9, 19, 20, 27, 28, 29, 45, 46, 47, 52, 53, 59, and 60

Bradus teaches microprocessor based motor control used for controlling a motor at a low conduction angle and detecting zero crossings of an AC waveform however, there is a lack of motivation to combine the teachings of Bradus with the motor control circuitry of Barthel et al. in which upon sensing a zero crossing of the AC power, utilizing a control circuit to determine the position of a motor control switch.

In regard to Claim 15

Barthel et al. teaches A shunt resistor (60) with relay contact (58) and in series with the motor (14) (when contacts 58 are open) and second side (34) of the power source wherein to determine the position of the motor control switch (12) the controller (20) is configured to monitor voltage across the resistor, read on by the capacitor (62) (See Figure 3 & Column 4, Lines 60-68) but prior art fails to teach wherein a shunt resistor is in series with an electronic switch and the second side of the electrical power source.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Cavallari whose telephone number is (571)272-8541. The examiner can normally be reached on Monday-Friday 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571)272-2800 x36. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DJC

October 27, 2005

BRIAN SIRCUS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800